

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 06 JUN 2005

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To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2005/001991

International filing date (day/month/year)
23.02.2005

Priority date (day/month/year)
27.02.2004

International Patent Classification (IPC) or both national classification and IPC
C09J4/06, C08F4/54

Applicant
AKZO NOBEL N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/001991

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:-
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/001991

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-8
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-8
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The following documents (D1-D3) will be referred to (see the ISR for the relevant passages):

- D1: US 2002/058764 A1 (SONNENSCHNEIDER MARK F ET AL) 16 May 2002 (2002-05-16)
- D2: DATABASE CA [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; SKVORTSEVICH, E. P. ET AL SKVORTSEVICH, E. P. ET AL: "The AIR3-2,2'- bipyridine system as an initiator of anionic polymerization" XP002328640 retrieved from STN Database accession no. 1977:518197
- D3: FLORJANCZYK, ZBIGNIEW ET AL FLORJANCZYK, ZBIGNIEW ET AL: "Free-radical initiating systems comprising organoaluminum compounds and organic electron -acceptors". MAKROMOLEKULARE CHEMIE , 186(11), 2255-68. XP008047205

1. The subject matter of claims 1-8 of the present application is not considered inventive for the following reasons: D1, which is considered to be the closest prior art, describes organoborane-amine adducts as initiators in acrylate polymerisation. The subject-matter of claim 1-8 differs in that organoaluminium is added. The technical effect of this feature appears to be to inhibit curing (p.3, l.9-14;p.9, table 1). Therefore, the objective problem can be formulated as to provide compositions that cure on demand. The solution proposed in claims 1-8 of the present application cannot be considered as involving an inventive step because feature 1 is disclosed in D2. D2 describes the use of (bipyridine)AIR3 as initiator in acrylate polymerisation. Apparently this reagent only slowly becomes active in the production of radicals required to initiate polymerisation, ie it has to be stored for a period of time before use. This is also supported by D3 which teaches that organoaluminiums are poor initiators for acrylate polymerisation when used without compounds such as quinines (which form aluminium derivatives of quinines and alkyl radicals that initiate polymerisation) so that diluting, as in the present case, an active borane-based initiator with a less active aluminium analogue will obviously decrease the rate of polymerisation of the acrylate monomers. The skilled person would regard it as a normal option to combine the teachings

of D2, or D3 with those of D1 in order to solve the problem of the present application.

Re Item VIII

Certain observations on the international application

The following objections are made under Art. 6 (PCT):

1. Claim 1: (i) the term "organoaluminium" is unclear as it means that a aluminium-carbon bond must be present, however, p.3, l.24-30, claims 2 and 5, and present example 10 suggest that compounds such as $(RO)_3Al$ are also intended to form part of the present invention. The claims must be clear in their own right.

(ii) the expression "to inhibit curing..." describes a "result to be achieved" (PCT GL Ch.-III,4.7).

2. Claims 6 and 7 (and 8 in part) are product claims which are defined by a process of preparation. It cannot be ascertained that these products were in fact prepared beforehand in this way.